

## **Shellfish Beds**

Clams, oysters, and bay scallops have supported important fisheries throughout the history of North Carolina commercial fishing. However, the productivity of these shellfish beds has declined as indicated by landings data. As filter feeders, shellfish contribute positively to water quality as they remove nutrients and suspended particles from the water and convert them to a food supply for other bottom dwelling organisms. However, this contribution is believed to be significantly reduced because of declines, particularly for oysters, over the last 100 years. It has been proposed that restoring oyster stocks through careful management and aquaculture will result in water quality improvement (Newell 1988, Ulanowicz and Tuttle 1992). Destruction of shellfish habitat occurs as a result of direct physical disturbances (such as clam kicking, mechanical dredging, and some trawling practices) and indirect disturbances that affect water quality. Oysters have been severely impacted in recent years by the parasitic diseases Dermo and MSX (Morrison et al. 1990, Sherman et al. 1991). In general, there is insufficient data to comment in detail on the trends in water quality and substrate quality and their affect on the habitats of bay scallops, clams, and oysters.

## **Summary**

All of the habitats described above provide vital ecological functions in the APES region. Damage to vital habitat areas affect human uses of resources as well. For example, the disappearance of SAV beds may cause declines in fish stocks which may in turn cause fishermen to lose jobs. People are attracted to North Carolina in the first place because of its many treasured natural areas and wildlife. Maintaining the diversity of species and the rich natural heritage of the APES region is dependent upon the careful management of land and water uses.

## **FISHERIES**

The APES region not only provides important habitat for the production of fishery resources, but also supports several fishing industries. Recreational and commercial fishermen use an assortment of gear and methods to pursue a variety of species (Cunningham et al. 1992b). The total annual value of North Carolina's coastal fisheries, commercial and recreational, has been estimated to be approximately \$1 billion (Street and McClees 1981, modified by federal inflation figures). The recreational and commercial fishing industries also provide thousands of full-time jobs for coastal residents (DMF data, Sport Fishing Institute 1988).

A greater demand for fisheries products and for recreational fishing opportunities has resulted in increased fishing pressure. Downward trends in commercial landings of finfish species may indicate declining stocks. The overall catch per unit effort is declining despite improvements in fishing gear and methods (Steel 1991). Eight species of finfish and shellfish, important commercially and recreationally, are believed to be overfished or severely depleted: Atlantic croaker, Atlantic sturgeon, Eastern oyster, red drum, striped bass, summer flounder, weakfish, and herring (DMF data). Fisheries declines may be attributed to a variety of factors: habitat loss, physical damage, natural events and cycles, excessive harvest pressure, changes in stream flows, and water quality degradation. Table 1 lists the status of several important recreational and commercial species of the region. In general, overfishing is believed to be a major cause of declines in catch.